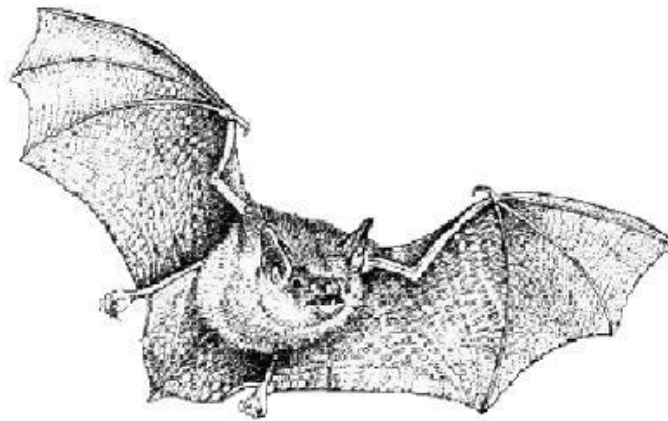


**Greenvilla,
Greenhalgh Lane,
Greenhalgh, Preston, Lancashire.
PR4 3HL**

**Survey & Assessment in Respect of Bat Species
and Nesting Birds (including Barn Owl).**

**Surveyor- Mike Fisher
(Bat Survey Licence Level 2 Class Survey Licence WML CL18)
(Bat Roost Visitor Level 1 Class Survey Licence WML CL15)**



Echo Calls Bat Surveys

24th September 2020

1. Introduction.

1.1 Reason for Survey.

As part of the process to obtain planning permission to develop the site by demolishing a dwelling on the site, before the construction of a new dwelling within the site boundary, a daytime evidence and opportunity bat survey, an evening bat emergence survey, and a post nesting bird survey (including barn owl), were requested, on the targeted buildings, and any shrubs, and hedgerows within the site boundaries. The purpose of these surveys was to provide evidence on habitats, and protected species, within the site boundaries, as part of the Local Development Framework (UDP Policy EN9).

1.2 Aims.

The aims of this ecological assessment were to:

- To provide clear advice to the client, and the Local Planning Authority, on the nature conservation value of the site, and surrounding area.
- To assess the site for the presence, or potential of protected species, within the proposed development site.
- To enable the client to comply with legislation afforded to protected sites and species.
- To highlight the presence of any habitats or species of ecological importance, including Habitats and Species of Principal Importance (NERC Act, 2006).
- To identify any ecological constraints, on future development.
- To establish the need for any further surveys and assessments.
- To make nature conservation recommendations.

1.3 The Site.

The site consisted of a detached dwelling and a separate detached stable block, both located within a plot of land, located along the northern edge of Greenhalgh Lane, in the Greenhalgh area of Preston, in Lancashire. The buildings and the adjoining land from now on, are referred to as the "site" at OS grid reference: SD 40093 35877, (refer to **Fig 1 - The Site Location**).

1.4 The Buildings.

There was a detached dwelling and a separate detached stable block, both positioned within a sizable area of land. The planning application is only for the demolition of the dwelling, however, it was thought that the stables could be used for the storage of building equipment, and machinery during the new construction, and therefore this building was surveyed as well, to prevent any potential harm or disturbance to any protected species.

1.5 Surrounding Land.

The targeted buildings were contained within a reasonably large site, adjacent to the northern edge of Greenhalgh Lane, and bordered by immature hedgerows, with a large area of open pasture across the Lane to the south, and with a large farm complex 0.14 km further south.

To the west of the site contained in its own grounds, was a large "eco-house" and a swimming pool, and with two large lakes belonging to Little Orchard Caravan Park, further west. Beyond these, a short distance away to the north-west were the numerous tree-lined lakes that constituted Stanley Villa Farm Fishing and Camping resort.

To the north and north-west of the site were areas of open pasture bordered by fragmented hedgerows, whilst to the east along Greenhalgh Lane, were numerous working farms and converted farm buildings, most with gardens and grounds bordered by hedgerows or long shelterbelts of mature trees and shrubs. Within these areas of pasture were a few scattered ephemeral ponds.

However other than the above-mentioned habitats, there were no large areas of woodland, or other large bodies of water, in the close vicinity, (**refer to Fig 1 – The Site Location, and Fig 2 – Google Plan**).

2. Methods

2.1 Risk Assessment, Possible Hazards.

The required access to the site was relatively easy, and the perimeters of the targeted buildings could be searched with care, and the dwelling and stables were in a reasonable condition, well maintained and fairly sound. Although the areas around the site perimeter contained hedgerow and fencing, there were no more hazards, other than those normally associated with surveying both the inside and outside of these types of buildings.

2.2 Methodology of Bat Surveys.

A number of factors are used for the survey methodology, which include:

- Knowledge of bat species relevant to the site location, and geographical range;
- Nature of the immediate, and surrounding habitat, in relation to foraging opportunity;
- Condition of trees, shrubs, and any water bodies;
- Presence/absence of roost potential:
- Value of roost potential – if present.

2.3 Daylight Evidence and Opportunity Survey.

The daylight evidence and opportunity survey took place on 15th September 2020 and was carried out in order to assess the site, and search for evidence of bat occupation, (including recent and historic use), within the buildings.

It comprised a search for bats, bat droppings, urine stains, remains of invertebrate prey, grease marks from repeated contact, or passage through narrow roost accesses, or against surfaces, and any other signs of bat occupation, and at the same time looking for evidence of nesting birds, active nests and feathers.

Areas within the targeted buildings searched were:

- Outside; the eaves and walls for signs of potential bat access holes, the ground, windowsills, and any other surfaces, such as low roofs or refuse bins, which may occur underneath the eaves, and around the perimeter of the building, which may catch bat droppings.
- Inside the buildings, in the roof void, on floors, roof trusses, door lintels, window ledges, or on pieces of equipment, behind window shutters and curtains, and inside chimneys where possible, also in spider's webs and other places where droppings or prey remains may collect. Also, noting any noises such as scratching and squeaking which may be made by roosting bats.

The optimum time to investigate buildings for evidence of a bat roost, is between May and September, however, this can sometimes be earlier or later in the year and is weather and temperature dependant.

Evidence and opportunity inspections and assessments may be conducted outside of this time, and can often provide conclusive results, which can save expense and time for Planning Applicants.

The habitats and any trees surrounding the site, were assessed for their suitability for use by foraging and commuting bats.

All evidence of current or previous nesting bird species observed during the survey, was recorded (including barn owl).

2.4 Equipment.

Equipment used consisted of ladders, an endoscope, camera, close-focus binoculars, and powerful hand-held torches.

2.5 Evening Bat Emergence Survey

A single evening bat emergence survey was carried out on 15th September 2020, to further assess the site, by observing how bats utilise the site, and observe if any bats emerged from possible roosts within the any part of any of the buildings, within the overall perimeter of the site.

2.6 Equipment

The equipment used during the survey, consisted of close-focus binoculars, powerful hand-held torches, an Echo Meter Touch 2 real-time expansion detector for Android, and a Bat Box 3D heterodyne bat detector with earphones.

3. Results

3.1 Daylight Survey.

3.1.1 Weather.

The weather conditions at the start of the survey on 15th September 2020 were good. There was some cloud and a light breeze, (Beaufort Scale 2/3), and with a temperature taken at the start of the survey of 18°C, such conditions were still suitable for a survey of this type.

3.2 Possible Roost Sites.

3.2.1 The Dwelling.

The dwelling was a rectangular two-storied structure covered in white render, with a pitched roof covered in underlined slate, and an insulated roof void, however, the void itself was heavily cobwebbed. The building was positioned at the southern end of the site, close to the southern boundary.

The dwelling was fully occupied, heated, and insulated, and in a well maintained condition, with sound soffits and eaves, and offered negligible bat roosting potential, (refer to **figs 3 and 4** and **photos 1 to 6**).

There was a potential bat access point however and this was:

- One of the roof slates close to the northern edge of the roof had lifted, leaving a small gap beneath, large enough to offer some bat roosting potential, however close inspection using close-focus binoculars, of the gap and also the surrounding slates, found neither droppings, prey remains or urine staining, nor was there any fur staining indicating that the gap had not been used by bats for roosting purposes, (refer to **figs 3 and 4**, and **photo 3**).

3.2.2 The Stable Block.

The stable block was positioned in the south-western corner of the site, across an area of concrete cap parking to the west of the dwelling. It was a long, rectangular, single-story building, orientated in a north to south direction and constructed from brick with a southern elevation covered in “pebble-dash” render. It had a pitched roof, covered in concrete tiles, and underlined in timber planking, but there was no roof void. Although the building was unheated, it was well maintained, with a sound roof and soffits, and with well-pointed walls and eaves, which offered negligible bat roosting potential, (refer to **figs 3 and 4** and **photos 7 to 12**).

There were potential bat access points however and these were:

- At several locations along the central ridge of the roof, there were ventilation louvres that could offer potential bat access into the building interior, however, inspection of these using close-focus binoculars, found them all to be internally meshed, and therefore offered negligible potential for roosting bats, (refer to **figs 3 and 4**, and **photo 8**).
- There was a large gap over the large central double doors, large enough to allow both bats and birds to enter into the block, but close inspection of the gap found no evidence of bat droppings, no remains of invertebrate prey, nor any grease marks or fur stains from repeated contact or passage between the parts of the door, therefore the gap was deemed not to have been used by roosting bats, (refer to **figs 3 and 4**, and **photo 9**).

Mounted upon an internal timber beam were two old Swallow nests, (*Hirundo rustica*), and although the nests looked as though they hadn't been used recently, the building was in regular use, and any nesting potential would be lost due to disturbance, (refer to **figs 3 and 4**, and **photo 12**).

No evidence of roosting bats was detected in, on, or around, any part of the dwelling or the stable block, either internally or externally. Nor was there any evidence of previous use by roosting bats detected anywhere within the site.

The search also found that other than the historic nests found in the stable block, there was no other evidence to suggest that any part the buildings, or anywhere else in the overall site, had been used historically by other nesting or roosting birds.

During the survey of the site, no owl pellets, faecal splashes, feathers or prey remains were found to suggest that any part of the veterinary building, surgery, or barn complex was currently been used by barn owls, and it was deemed unlikely that the buildings would be used for roosting purposes, as the interiors offered negligible perching potential.

3.2.2 Trees and Shrubs.

There were no mature trees actually within the site, however there were long lines of hedgerow and a few mature trees around the overall site boundary, and where possible, these were all closely inspected, but none were found to offer any bat roosting potential.

Also, there was a number of mature trees and shrubs growing beyond the western boundary of the site, but as these were outside the actual site boundary, they were only casually inspected, and all of these were judged to be Category 3 (of negligible value for roosting bats) in accordance with **Appendix 2**.

It was thought likely, that some of these trees and shrubs could be used by nesting birds, during the nesting season, but at the time of the survey, although there was some bird activity in and around the site, no active nests were found. It was also surmised that due to the time of year, most birds will have ceased to breed.

3.2.3 Foraging Potential and Alternative Bat Roost Potential.

The site was in an rural area, and the nearby habitat consisted of few nearby farms, surrounded by numerous large areas of open pasture, bordered by fragmented lengths of hedgerow, and tall shelterbelt of mature trees and shrubs with bramble understory, and with a few isolated ephemeral ponds positioned within the surrounding fields. There were also the nearby swimming pool, the two large lakes and the numerous tree-lined fishing lakes to the west.

All these ponds, lakes and lines of hedgerow and trees, can all be beneficial to insect species, (paragraph 1.5), and together with the targeted buildings themselves, offered linear features suitable for foraging bats such as Common Pipistrelle (*Pipistrellus pipistrellus*), and possibly other bat species, to help them navigate and commute, and to forage along for their insect prey.

Although there were no other large areas of woodland or other bodies of open water in the nearby area, the area overall, was assessed to offer low to moderate potential value for foraging bats, primarily pipistrelle species, but it was thought that small numbers of other species could be present.

It was considered that other buildings, especially dwellings, in the surrounding area could offer greater potential as bat roosts. Bats favour heated building whilst breeding.

3.3 First Evening Emergence Survey.

An evening bat emergence survey was also carried out on 15th September 2020, in order to further assess the site, and observe if any bats emerged from roosts within any part of any of the buildings within the site, or from any trees, hedgerows and shrubs, around the perimeter of the site, and also to observe how bats use the surrounding areas for both commuting and foraging.

3.3.1 Weather.

The weather conditions at the start of the evening emergence survey on 15th September 2020 were good. There was some cloud cover and a light breeze, (Beaufort Scale 2/3), and with a temperature taken at the start of the survey of 16°C. Such conditions were good for a survey of this type.

3.3.2 The Survey.

The sunset on the 15th September 2020 was 19.23 hrs, and the survey started 17 minutes before the sunset at 19.06 hrs, and ended when it was too dark to observe the bats well.

The first bat recorded at 19.52 hrs, was a common pipistrelle (*Pipistrellus pipistrellus*), heard but not seen amongst the woods to the west of the site, whilst at 19.54 hrs, a second pipistrelle was heard but not seen, again amongst trees, to the north-east of the site. It was assumed that both of these were commuting bats, (refer to **pink arrows 1 and 2** on **fig 4**).

At 19.55 hrs a pipistrelle was observed foraging in a loop, to the south-west of the site over the trees along the northern edge of Greenhalgh Lane. This behaviour continued until the end of the survey, during which time numerous feeding buzzes were heard, (refer to **pink arrow 3** on **fig 4**).

Shortly afterwards at 20.00 hrs, a pipistrelle was observed foraging over the trees and pasture to the east of the site. Because the flight path was in and out of the trees, continual observation of the bat could not be made, and it was thought that this could possibly be one of the bats heard but not seen earlier in the survey. This successful foraging behaviour continued throughout the rest of the survey, (refer to **pink arrow 4** on **fig 4**).

No other bat activity was observed, and at no time were bats seen to have emerged from any of the buildings on site, nor from any of the trees and shrubs along the borders of the site.

Although there was some bird activity during the survey, none were seen exhibiting any type of nesting behaviour.

During the survey of the site, no owl pellets, faecal splashes, feathers, or prey remains were found to suggest that any of the buildings were currently being used by barn owls.

4. Conclusions.

4.1 In summary, at the time of the surveys (15th September 2020), no historic or current evidence of roosting bats was found, in any part of the buildings within the site boundary, nor in any of the hedgerows, shrubs or trees located within the site or around the site perimeter.

4.2 The dwelling was fully occupied, heated, insulated, and in excellent condition, well-maintained, and with sound soffits and eaves, and therefore offered negligible bat roosting potential, (Refer to **Appendix 2**).

4.3 Although the stable block was in a reasonably maintained condition, it was only used for storage. It was unheated, uninsulated and with an interior that was draughty and cold, and therefore it was deemed unsuitable for breeding bats. It was also concluded that the building would be penetrated by frost in cold weather, thus making it unsuitable for hibernating bats. The stable block was therefore assessed to have very low potential to support daytime roosting bats, and assessed to have negligible potential for other use, (refer to **Appendix 2**).

4.4 None of the hedgerows or shrubs around the site boundary, offered any suitable roosting opportunities for bats of any species, and therefore, they were concluded to offer negligible potential as possible bat roosts, (refer to **Appendix 3**).

4.5 The adjacent habitats had the potential to support low to moderate numbers of foraging common pipistrelles, but large numbers of other species of bats was unlikely. It is concluded that since there is currently no evidence of the presence of bat roosts within any part of the site, that the proposed demolition of the house, and the building of a new dwelling on the site, will not have significant implications on the population status of local bat species. There will not be requirement for an EPS mitigation licence (as issued by Natural England) but as a measure of best-practice, precautionary measures should be applied as described in section 5 below.

4.6 It was also concluded that since no evidence of roosting bats, or evidence of either recent or historic bat occupation, had been found during the surveys carried out on 15th September 2020, and taking the time of the year into account, then a single visit to the site to carry out a daylight evidence and opportunity bat survey, was considered sufficient to assess the site, (refer to the 'Bat Worker's Manual' (JNCC 2004) and 'Bat Surveys – Good Practice Guidelines' (BCT 2016), paragraph 8.3.4).

4.7 Since bats, particularly Pipistrelles, are opportunistic, an absence of roost evidence elsewhere within the site, does not preclude the low possibility of small numbers of bats, using the site occasionally in the future and/or at other times of year. It is considered that the likelihood of a significant roost (such as a maternity roost) being established is very unlikely, with lone and/or transient roosting likelihood being negligible.

4.7 It was understood that there may be some site clearance work carried out during the planned development, but that this will be kept to a minimum, and that the boundary hedgerow around the site would probably be mostly unaffected by the work. Also as the planned development includes the construction of a new dwelling on the plot, this does not drastically alter the footprint of the site, and, as bats use linear features such as lines of trees or walls, as foraging, navigating and commuting routes, it was concluded that any small loss of the habitats, and any future development works on the site, would not affect the overall foraging or commuting potential for bats in the area.

4.10 All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) while they are breeding. There was potential for the shrubbery around the sites' perimeter, to be used by birds for both roosting and nesting purposes, but only the historic swallow nests were found during the surveys and it was also surmised that due to the time of year, most birds will have ceased to breed, (Refer to **Appendix 1**).

4.11 Although the surrounding habitat of open pastures, lines of mature trees and hedgerows offered good foraging potential for barn owl, the targeted buildings on site offered negligible breeding or roosting potential. Also, as the overall site was in constant use, any roosting behaviour would be limited due to disturbance. As no evidence of roosting barn owls was observed in any part of the site, it was concluded that barn owls do not use the site, either as a regular nesting roost, or as a breeding roost, (Refer to **Appendix 1**).

5. Recommendations.

5.1 The proposed changes to the site as laid out in the planning application, can commence with minimal risk to roosting bats or nesting birds.

5.2 The aim of any mitigation is to ensure that any work is carried out in a manner that avoids either harm, or significant disturbance to either bats or nesting birds, also, to create new enhanced roosting opportunities, both during and after the development. A key issue in successful mitigation measures, is the scheduled timing of the works. Ideally, before demolition commences, the building, especially its roof, should be worked on in winter to avoid the possibility of bats moving in, and using the building as a spring, summer, or autumn roost after the survey. The safest period will be from the first hard frosts, normally mid-December, until mid-March, although this could be earlier in a really warm spring or later in a cold spring.

5.3 However, even if the building is worked on at other times, it will be very unlikely that roosting bats will be disturbed, but it is recommended that work starts as soon as possible after this survey, and that any ridge tiles, slates or sheeting over walls and gables, be carefully removed by hand, (the ridge and edge tiles, and copingstones, are the features most likely to harbour potential for the support of roosting bats). Whilst dismantling the roof, once the slates and any insulation have been removed, the building should be left for two nights before work continues. This will permit any bats present in cracks in the stonework, or at the top of a wall time to move off.

5.4 As a measure of best practice and in accord with a key principle of National Planning Policy Framework (2012), it is recommended that the re-development scheme for this site, incorporates biodiversity enhancement measures, and an appropriate measure will be the installation of bat boxes, or bat bricks. The latter can be incorporated within the new building walls at the gable ends, and the former can be attached to either the new building, or to any surrounding suitable trees. In connection with the development proposals it is recommended that these measures are implemented to maximise the opportunities for wildlife at the site, (refer to **Appendix 6** for details).

5.5 If more than 12 months' elapses between this survey, and any commencement of building work, then the surveys must be repeated. These need to be carried out under weather conditions suitable for normal bat activity, and when bats are fully active (May to September but is weather dependent).

5.6 As there was good potential for both roosting and nesting birds in the trees, shrubs and hedges around the site perimeter, it is recommended therefore, that the surrounding hedgerow, where possible be left untouched, to encourage future nesting, and to maintain navigation, foraging and commuting routes for bats.

5.7 It must be remembered however, that it is an offence to disturb active birds' nests. It is recommended therefore, that before any commencement of any tree or shrub clearance, and new building work, that a careful survey looking for any evidence of nesting birds, is carried out. If

evidence of an active bird's nest is detected, then the nest must be left undisturbed, until it is appropriately confirmed that the young birds have fledged. It is recommended therefore, to reduce any nest disturbance, that no activity involving people or their equipment, it is to be carried out within a 3m radius of active nests. If there is any doubt, please refer to the consultant. This guidance is applicable during the bird breeding season which typically extends from March to August inclusive.

5.8 This is particularly important in relation to the old swallow nests within the interior of the barn complex, found during the 15th September 2020 survey. It would seem that there could be a chance to encourage future potential nesting opportunities during the planned schedule for modernisation of the site, it is recommended therefore, that some Schwegler No 10 woodcrete swallow nests be put up, to mitigate for the past loss of nesting opportunities, during, and after the development. This type of nest box is widely available, and they should be erected as soon as possible, (refer to **Appendix 7** for details).

5.9 It is also recommended that, if the hedgerows around the site perimeter are removed, pruned, or disturbed during building works, all clearance and disturbance should be undertaken outside the hedgehog hibernating months, November to mid-March. If this is not possible, a suitably experienced ecologist must be present, to oversee all vegetation removal, to ensure that no hedgehogs are disturbed whilst hibernating (Hedgehogs are a UK BAP Priority species).

5.10 Close boarded fences with concrete bases are barriers to animal movement, and It is recommended, that any new perimeter fences along the boundaries are not to be sealed at their bases. Where possible, hedgerows are to be used instead, with timber post and wire fencing also serving to enforce boundary lines, without prohibiting wildlife movements. If any boarded fences are required, it is recommended that there is a 3 – 5cm gap between the wood and the ground, (greater in some locations and less in others is not a problem) so that wildlife such as hedgehog and amphibians can pass into and out of the garden.

5.11 No hole or pit should be left uncovered over-night, to ensure that wildlife such as amphibians or hedgehogs are not trapped, and unable to escape. Alternatively, a broad wooden plank or similar can be placed in the excavation to allow animals to escape. A scaffolding board pitched at a maximum 45° angle would be ideal.

5.12 During the development, all excavations should be checked first thing each morning, prior to the start of works that day. Any animals found within excavations should be allowed to escape and move off, or carefully removed and placed within suitable habitat cover, before site works commences for the day.

5.13 Outdoor lighting is typically a deterrent to wildlife, especially bats and nesting birds, it is therefore recommended, that any future outdoor lighting, installed during the proposed development, be screened, hooded or positioned low at bollard level so that it does not illuminate the roof or eaves, or nearby trees and shrubs.

5.14 To enhance the site's value for wildlife, it is recommended that tree planting is planned as part of the development, and that the trees used are all British native trees as far as is possible. These trees are more likely to attract insects and are therefore beneficial to foraging bats and other wildlife. Suitable species include: Hawthorn, Rowan, Wild Cherry, Guelder Rose and Crab Apple. These have been chosen for their attractive blossom and fruits. Oak, Ash and Willow species are recommended away from buildings and drains.

5.15 It should be remembered that bats are occasionally found in the most unexpected places. If any bats are found during unsupervised work, the consultant (07745 268815) or the Bat Conservation Trust (0345 1300 228), should be notified and work stopped immediately.

Failure to do so would be a criminal offence.

6. Survey Constraints

Surveying for bats at a specific season of the year, does not provide information of use of the site by bats at other times of the year. The current survey was undertaken at the start of autumn, and reflects past bat activity, and whilst consideration may be given to roosting at other times, there may be no evidence for activities outside the survey period.

As bats can utilise very small cracks and crevices, it is not possible to completely discount their use of some of the trees and shrubs around the site, although the survey did not identify any evidence of use. Assessments can however be made of potential use from the survey findings collected, but it may not provide a full picture of site usage.

Small bat roosts and single roosting bats can easily be overlooked. They can be difficult to detect during inspection, as they leave few field signs which can easily be missed during surveys. External signs e.g. droppings, prey remains etc., are also subject to weather and rain, which can often remove the signs prior to an actual survey. This is particularly valid when inspecting trees and shrubs.

7. References

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8. Surveyors Qualifications

The surveyor Mike Fisher is a holder of Natural England Class Licence Registration Number: 2015-10595-CLS-CLS, this is the Bat Survey Level 2 Class Survey Licence WML CL18, and Natural England Class Licence Registration Number: 2015-10592-CLS-CLS which is the Volunteer Bat Roost Visitor Level 1 Class Survey Licence WML CL15.

The surveyor also has a licence to disturb and take bats for scientific, educational or conservational purposes by Countryside Council for Wales (Licence Number S085859/1)

He was assisted on the survey by Dylan Platt who is experienced in the use of heterodyne bat detectors and bat surveys.

9. Plans & Photographs

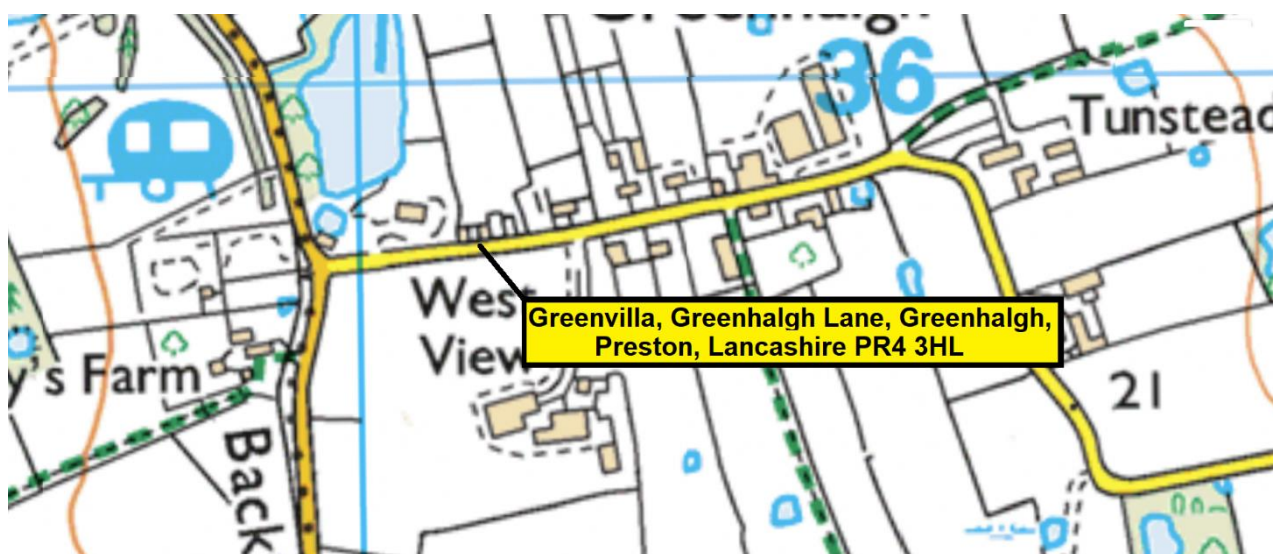


Fig 1 - The Site Location

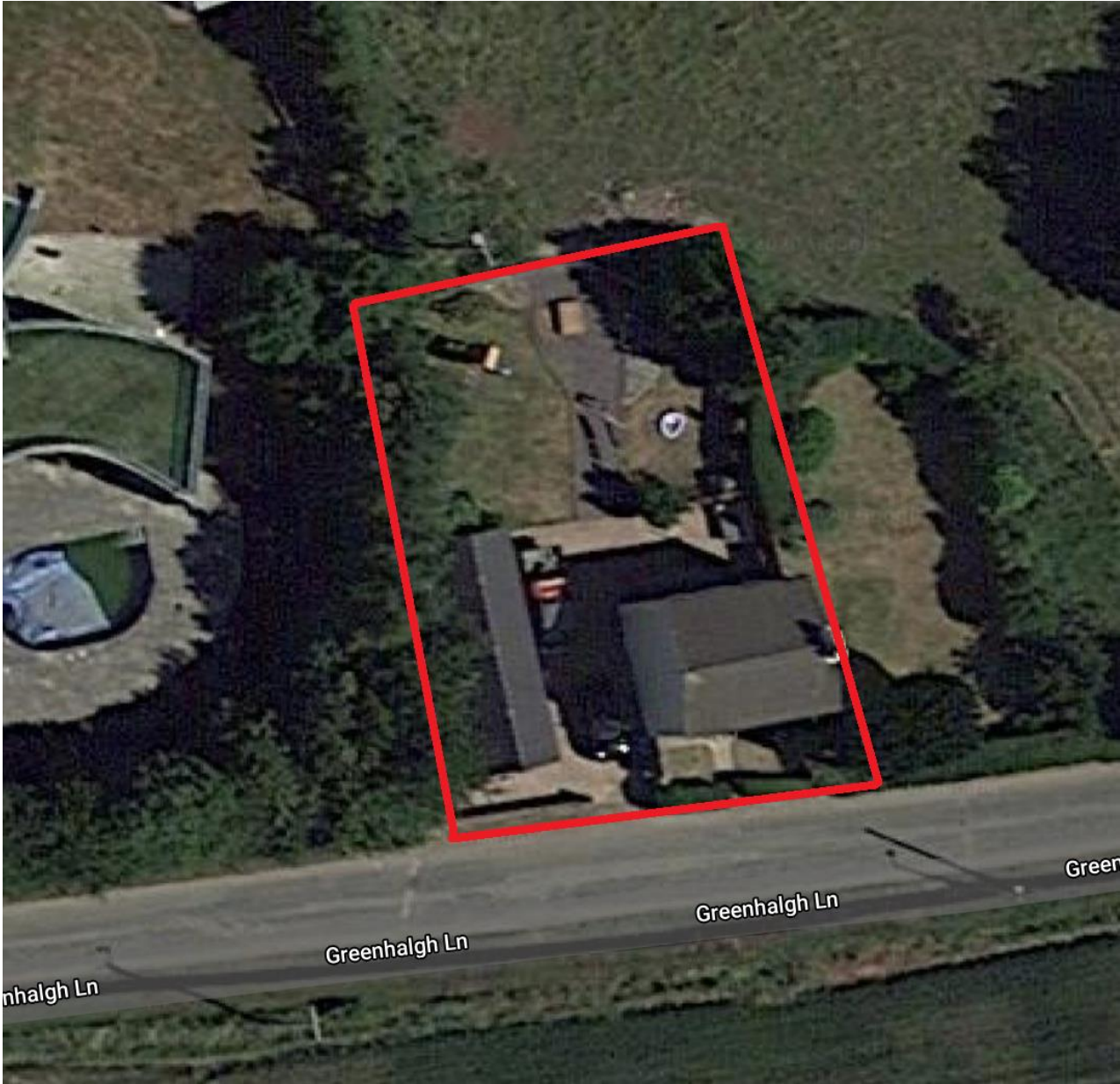
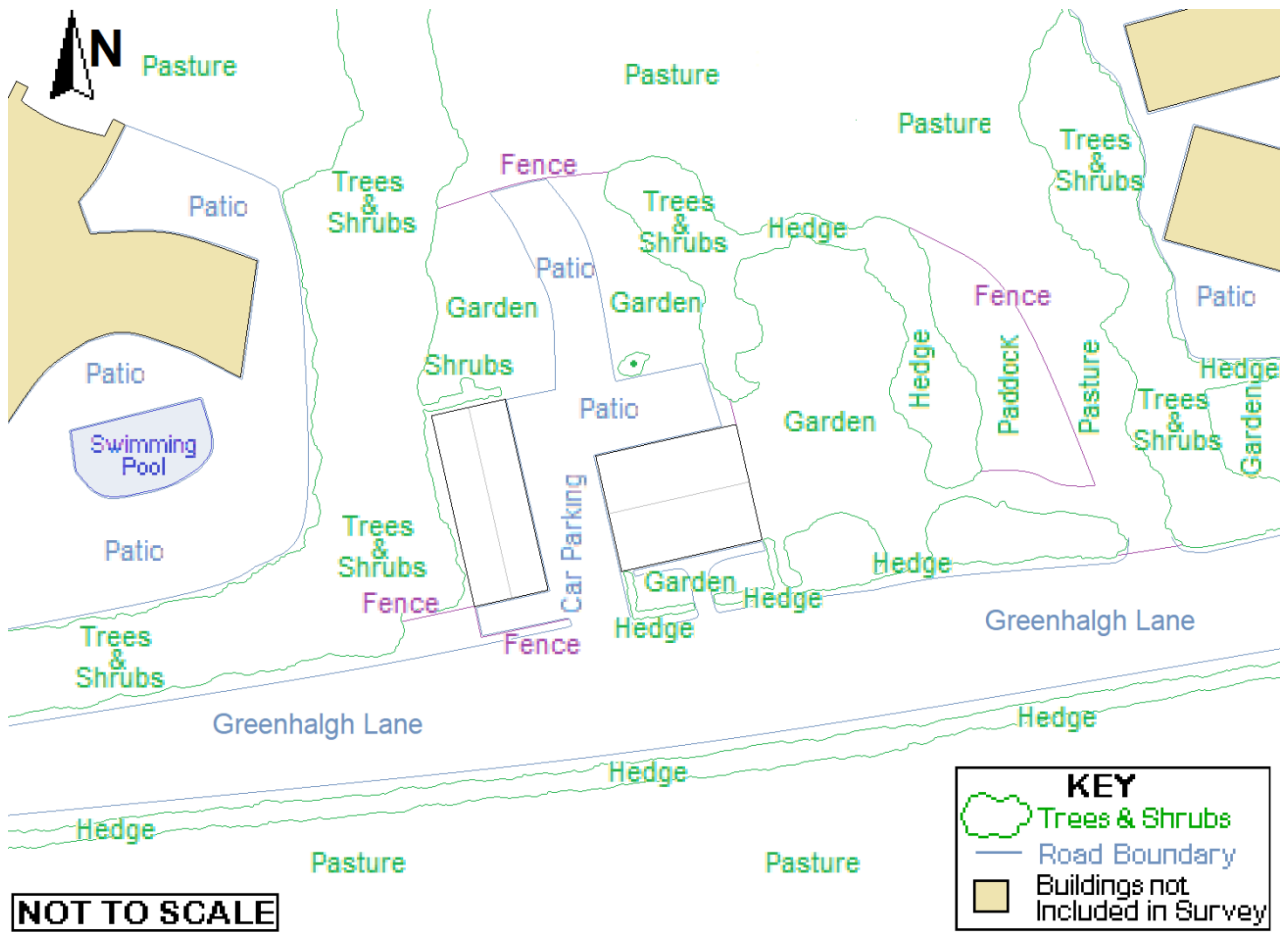


Fig 2 – Google Plan



**Fig 3 – Main Plan
Showing the local area and habitats**

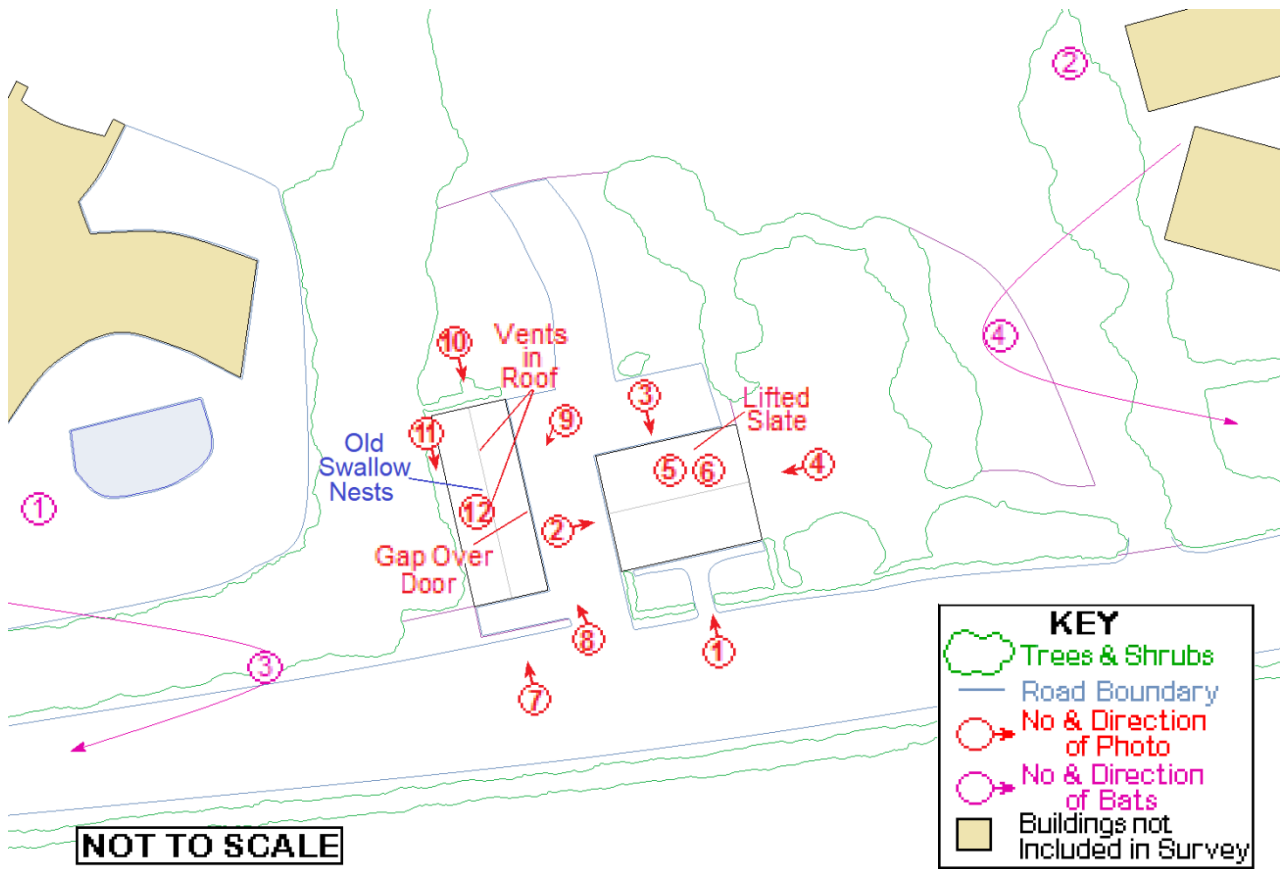


Fig 4 – Plan of Results



PHOTO 1
Southern Elevation of Dwelling



PHOTO 2
Western Elevation of Dwelling



PHOTO 3
Northern Elevation of Dwelling



PHOTO 4
Eastern Elevation of Dwelling



PHOTO 5
Underside of Dwelling Roof



PHOTO 6
View of Spider Webs In Dwelling Roof



PHOTO 7
Southern Elevation of Stables

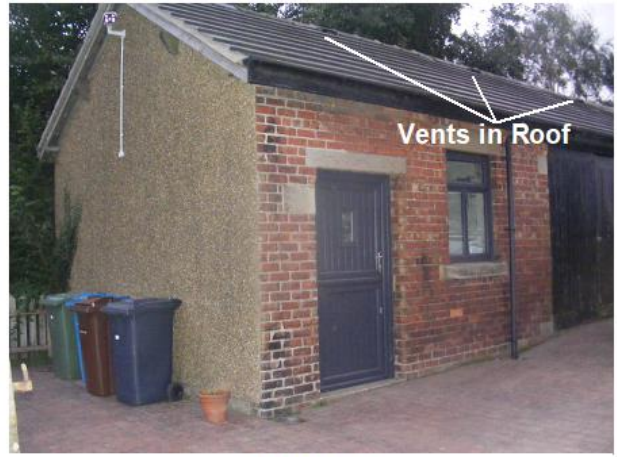


PHOTO 8
South-eastern Corner of Stables



PHOTO 9
Eastern Elevation of Stables



PHOTO 10
Northern Elevation of Stables



PHOTO 11
View Along Western Elevation of Stables



PHOTO 12
Underside of Stable Roof

24th September 2020
Mike Fisher, Bat Worker
Holder of Natural England Bat Roost Licence

Disclaimer.

All reasonable effort has been taken to ensure an accurate assessment of the birds and bats at this site. The absence of recorded presence or sign should not be taken as an absolute guarantee that a site is not being used by a particular species. There is also no guarantee that any particular species will not use the site at any time in the future. Survey results for both bird and bat activity may be weather or seasonally dependent. Any interpretation of legislation is based on our understanding and experience of the law. The relevant statutory authority can provide a more definitive interpretation.

This report has been prepared by Echo Calls Bat Surveys with all reasonable skill, care and diligence, within the terms of the Contract with the Client.

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APPENDIX 1: Synopsis of Relevant Legislation

Bats and the Law

In Britain, all bat species and their roosts are legally protected, by both domestic and international legislation.

This means you will be committing a criminal offence if you:

Deliberately capture, injure or kill a bat

Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats

Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time)

Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat

Intentionally or recklessly obstruct access to a bat roost.

Licensing

Licenses to permit illegal activities relating to bats and their roost sites can be issued for specific purposes and by specific licensing authorities in each country. These are sometimes called 'derogation licenses' or 'European Protected Species' licenses, and are issued under the Habitats Regulations. It is an offence not to comply with the terms and conditions of a derogation Licence. If you carry out work affecting bats or roosts without a Licence, you will be breaking the law.

Who needs to take particular note of the legislation?

Property owners/householders who have a bat roost in their property.

Woodland owners, arboriculturalists and foresters.

Pest controllers.

Planning officers & building surveyors

Architects, property developers, demolition companies, builders and roofers.

Which legislation is relevant for bats and roosts?

In England and Wales, the relevant legislation is the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

In Scotland, the key legislation that applies is the Conservation (Natural Habitats &c.) Regulations 1994 (as amended).

In Northern Ireland bats are listed under Schedule 2 of the Conservation (Natural Habitats etc) Regulations (Northern Ireland) 1995 and in the Republic of Ireland, under Schedule 5 of the Wildlife Act 1976 and Schedule 1 of the European Communities (Natural Habitats) Regulations 1997.

Defences include:

Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release

Mercy killing where there is no reasonable hope of recovery, (provided that person did not cause the injury in the first place - in which case the illegal act has already taken place).

Penalties on conviction –

People committing bat crimes can face six months' imprisonment and/or unlimited fines. Additionally, any profits made as a consequence of not following lawful process can be confiscated and items used to commit the offences such as vehicles, plant or machinery can be forfeited.

Under National Planning Policy Framework (2012), it is recommended that the re-development scheme for any site, protected species, such as bats should be a material consideration in planning applications. This has implications for bat foraging areas as well as their roosts.

The National Planning Policy Framework (NPPF) places a clear responsibility on Local Planning Authorities to conserve and enhance biodiversity and to encourage on the consideration that should be given to Protected Species where development may affect them.

The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation. This is supported by a guide to good practice entitled 'Planning for Biodiversity and Geological Conservation: Building in Biodiversity' in which paragraphs 5.34 and 5.35 identify that species such as bats are highly dependent upon built structures for survival and that roosts can be easily incorporated into existing and new developments/conversions to benefit these species.

Breeding Birds

All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended), whilst they are actively nesting or roosting. Section 1 of this Act, makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.

APPENDIX 2: Bat Roost Potential

Guide to bat roost assessment categories in built structures based on Table 4.2 in the BCT Bat Survey good practice guidelines (Hundt, 2012).

Category Description	Indicators
Confirmed Roost	<ul style="list-style-type: none"> • Sighting/hearing of bats (including emergence). • Fresh or old droppings.
High potential to support bat roost(s)	<ul style="list-style-type: none"> • Numerous or high potential roosting features that are not exposed to the elements: crevices deeper than 100mm, width 15-70mm: • Un-obstructed flyways. • Low disturbance levels. • Situated within or near to woodland, parkland or next to water bodies, buildings (i.e. potential foraging and roosting habitat). • Well connected to wider landscape through presence of continuous linear features such as hedgerows, watercourses, farm-tracks etc.
Moderate potential to support bat roost(s)	Some of the above features but considered to be less suitable on account of age, location and disturbance levels.
Low potential to support bat roost(s)	<ul style="list-style-type: none"> • Limited suitable roosting features. • Exposed roosting features e.g. open to wind/rain. • High levels of regular disturbance e.g. from lighting. • Isolated from suitable foraging habitat & commuting features.
Negligible potential	No features with bat roost potential recorded

APPENDIX 3: Bat Tree Assessment Criteria

Criteria for Assessment of Trees in accordance with Category 1 to 3 as defined in Table 8.4 of *Bat Surveys: Good Practice Guidelines 2nd Edition* (Hundt, L. 2012).

CATEGORY	DESCRIPTION	CRITERIA
Known or Confirmed	Confirmed roost	Confirmed roost Evidence found that indicates tree/tree features are being used by bats. Droppings found at the base of the tree, below a cavity. Bats heard 'chattering' inside a feature on a warm day or at dusk Bat(s) observed flying from or to a feature.
1*	Very high value	Trees with multiple, highly suitable features capable of supporting larger roosts. Features of particular significance, suitable for high priority roosts such as maternity roosts, used by large numbers of bats, offering conditions that are uncommon or rare in the local area. Features such as large cavities, extensive branch or trunk splits, also including multiple features in the same tree that offer a diversity of opportunities. Features may also include dense ivy.
1	High value	Trees with definite bat potential supporting fewer suitable features than category 1* trees or with potential for use by single bats. Features which provide a more secure form of roost for small groups of bats and individuals, but may still be quite common types of feature, such as small cavities, minor splits or sparse ivy cover.
2	Moderate value	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats. A tree which on close inspection the potential roost positions are in some way not ideal. They could be upward facing or holes very low down or cluttered by adjacent branches.
3	Low/Negligible value	Trees that have no features which could be used by bats for roosting (Usually young trees).

APPENDIX 4: Planning Considerations

When considering each planning application, the presence of protected species, such as those listed above, is a material consideration which must be fully considered by the Local Authority when granting planning permission. If a licence from Natural England is required, then prior to issuing any planning consent, the local planning authority will need to be satisfied that there is no reason why such a licence would not be issued. Therefore, in reaching the planning decision the local planning authority will need to have regard to the requirements of the Conservation of Habitats and Species Regulations 2010.

The three licensing tests given in the Regulations must be considered. In summary, these are that:

1. The development is required for the purpose of:
 - preserving public health or public safety,
 - for other imperative reasons of over-riding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.
 - for preventing serious damage to property.
2. There is no satisfactory alternative.
3. The proposal will not be detrimental to the maintenance of the population of the species at a favourable conservation status.

All necessary information would need to be provided to the planning authority as part of the planning application in order to address the above tests.

The Natural Environment and Communities Act (NERC Act) 2006 extended the biodiversity duty set out in the Countryside and Rights of Way (CROW) Act to public bodies and statutory undertakers to ensure due regard to the conservation of biodiversity. The Duty is set out in Section 40 of the Act, and states that:

"Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity"

The Duty applies to all local authorities, community, parish and town councils, police, fire and health authorities and utility companies. Section 41 (S41) of this Act (the 'England Biodiversity List') also requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. This list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40(1) of the Act.

Also, Local Authorities must follow the National Planning Policy Framework (NPPF) which provides guidance on the interpretation of the law in relation to wildlife issues and development. For each development proposal considered by the Local Planning Authority the NPPF states that the authority must aim to conserve and enhance biodiversity. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

APPENDIX 5: Bats: What to do should bats be found during building work

All of the UK's bats and their roosts, are protected by law, (see Appendix 1), so it is important to understand these laws, if you are planning any building or remedial work that may affect or disturb a bat roost. The relevant statutory authority should be initially contacted for advice.

Having bats roosting within a building, does not necessarily mean that work cannot be carried out. What it does mean is that the work will need careful consideration, especially in terms of time and materials, so that the area can continue to be used by both bats and people. Therefore, the earlier in the process the bats are taken into account, the less disruption to building plans there will be.

If at any point during either new building work, renovation work, or demolition, one or more bats are found, then all work being undertaken by contractors should stop immediately. All working machinery and contractors should be removed from the area where the bats have been found, and advice sought immediately from one of the following, on how to proceed while causing minimal disturbance to bats.

Advice can either be provided by a professional licensed ecological consultant - Echo Calls Bat Surveys on 07745 268815, the Bat Conservation Trust on 0345 1300 228, or from your Statutory Nature Conservation Organisation (SNCO) , or from Natural England on 01270 754 000.

Depending on the advice given, a licensed bat worker, or suitably qualified Natural England approved representative, will then be sent to site to liaise with the site manager, and Natural England itself. Depending on the advice given, actions will be recommended that may include the safe removal of the bat by the nominated person, only where written or verbal permission has been gained by Natural England.

Works will recommence when Natural England are satisfied that the risk to bats has been removed. If, however, it is determined that the proposed work on site contains more risk to bats than was originally thought, then it is probable that further work will only proceed, under a Natural England Development Licence.

If a bat is found under a tile, slate, flashing or any other covering material, work must stop immediately. If the bat does not fly out immediately, then the area around the roost must be carefully covered over, to protect the bat from the elements and further disturbance, leaving a small gap for bats to escape voluntarily. At this point, advice must be sought as mentioned above. The materials used to cover the occupied bat roost, must be free from liquid, oil, grease and other contaminants.

It is recommended that the handling of bats be avoided wherever possible, but if it absolutely necessary, then to avoid a bat being harmed, gloves must be worn whilst handling the bat. It should be carefully caught, placed in a cardboard box with air holes in the lid, and a small container containing water. The box should then be kept in a very quiet, dark area, away from further disturbance, whilst awaiting the arrival of the licensed bat worker, or Natural England approved representative.

Failure to do any part of this could result in a criminal offence.

APPENDIX 6: Bats: Types of Bat Box.

The aim of any mitigation is to ensure that any work is carried out in a manner that avoids harm or significant disturbance to bats, and also to create new roosting opportunities for bats both during and after the development.

Schwegler 1FD boxes are to be erected to larger trees located along the edges of the site. This type of bat box is a “general all-rounder” and is suitable for all types of bats.

These boxes are to be erected as recommended by the Bat Conservation Trust guidelines which state that

- Ideally, erect the boxes facing so they face in different directions, to provide a range of temperature conditions. For example, boxes facing from south-east to south-west allow the sun to fall on each box for part of the day. During very hot days a south-facing box may overheat, but the other boxes should have some shade during the day.
- Bat boxes should be located close to a linear vegetation feature such as a tree line or hedgerow or to lines of buildings. Some bat species use these features for navigation between their roosting site and feeding ground and to avoid flying in open and exposed areas.
- Ensure that tree branches or other items will not impede the bats’ approach to the box – clear away underneath the box so the bats can land easily before crawling into the box.
- Boxes should be erected at a height of approximately 4m above ground level



Schwegler 1FD Bat Box

This Schwegler 1FD bat box has been developed specifically for smaller bats. The interior and the type and size of the entrance hole match the requirements of smaller species. It features a special layout inside the domed roof, an increased interior height, and two grooved internal wooden front panels with precise spacing between them.

This model has proved highly effective as a nursing area.

Occupants: Small bats such as the Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Daubenton’s Bat (*Myotis daubentonii*) and Common Long-eared bat (*Plecotus auritus*).

Standard bricks to provide access for bats into roof or wall spaces.

With the increase in development of new building sites and redevelopment of older buildings, especially in rural areas, availability of roost sites for bat species is becoming more limited. However, bats can be encouraged to remain at old sites or colonise new sites by incorporating artificial roost spaces into the building during the build or renovation process.

The bat brick is a standard sized brick, shaped especially to allow bats to access the cavity of a house. They can be incorporated during both new build or renovation projects. (A cavity chamber may need to be constructed to maintain an area free of insulating material where bats can roost).

The bricks are available in three standard colours - Red, Golden and Brown.

Please note: If you are interested in a specific brick type to match your building, you will need to send your own brick(s) to the manufacturer. Please contact us by email or telephone for more information.

Specification

Brick dimensions:

- * Height: 60 mm
- * Width: 215 mm
- * Depth: 100 mm
- * Entrance dimensions: approx. 110 x 25 mm

Brick codes:

- * Red - Ibstock A0610A (cheddar red)
- * Golden - Ibstock A0611A (cheddar golden)
- * Brown - Ibstock A0612A (cheddar brown)



APPENDIX 7: Nesting Birds: Mitigation and Compensation Measures.

Birds are declining throughout the country due to loss of roost and nesting places, and as the development may disturb swallow nesting potential on the site, artificial nests are to be erected to compensate for this possible loss. The erection of artificial nests around the complex, will provide alternative sites for both species of bird, and make a positive contribution to their conservation. Swallows prefer building nests between rafters, whilst treecreepers prefer secretive locations often beneath ivy but the artificial nests for both species can be attached to eaves, or beneath some form of canopy which can be provided by an area of an outhouse or an open building with a suitable roof structure.

No. 10 Schwegler Swallow Nest



Specifications

- * Height: 11cm
- * Width: 25cm
- * Depth: 14cm
- * Weight: 0.9kg



It is increasingly difficult for Swallows and House Martins to find suitable nest-building mud and when they do find it, it is often poor quality. In addition, the walls of buildings are nowadays often very smooth so nests tend to fall down, sometimes with the nestlings inside. In many places, the vibration caused by heavy vehicles shakes the nests loose.

The Swallow Nest No. 10 consists of a woodcrete nesting bowl which is attached to a wooden panel of formaldehyde-free chipboard. The nest should be placed inside outbuildings such as sheds, barns or stables leaving a distance of at least 6cm between the top of the nest and the ceiling. You should ensure there is always access for the birds through an open window or sky-light. Swallows are sociable birds but multiple nests should not be placed at less than 1m intervals. Cleaning of the bowl is recommended, although not absolutely necessary.

These Woodcrete nest boxes are famous for their durability - lasting for at least 20-25 years. Woodcrete is a blend of wood, concrete and clay which will not rot, leak, crack or warp. They are backed by leading ornithologists, nature conservation organisations, government agencies and forestry experts. Schwegler boxes have the highest occupation rates of all nest boxes and are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting.